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THE

# Indiana School Journal:

PUBLISHED ON THE 15th OF EACH MONTH,

BY THE

## Indiana State Teachers' Association.

W. D. HENKLE, *Resident and Mathematical Editor, Indianapolis.*

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VOL. III. INDIANAPOLIS, SEPTEMBER, 1858. NO. 9.

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THE RIGHT OF THE STATE TO ESTABLISH A SYSTEM OF FREE SCHOOLS.

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There is always very much of interest connected with human development. We can not witness the unusual education of any faculty, whether mental or physical, without admiration. Great efforts of intellect; exhibitions of moral or religious power; strong social attachments and flashes of genius; all make us feel the superiority of the well-educated faculties over our elementary and unimproved powers.

However much we may in this age pretend to esteem our mental above our physical natures, yet to-day we would witness feats of unusual strength or activity—the well-trained nerves of the magician in performing his inexplicable sleights of hand, or the well-developed muscles of a man of great strength in his exhibitions of physical power—with infinitely more interest than we would see the ordinary action of an uneducated mind.

But I do not wish to discuss the relative importance of mental and physical education; neither do I wish to discuss the question whether a thorough mental and moral education is necessary to our best well-being—that question has with us long since been decided. All agree upon the necessity of education; all admit it to be the great element of our power, our happiness, and our virtue. Neither does any one object to the advantages of education becoming general. These questions have already been passed upon, and may be considered at rest.

But at this point of our educational movement, controverted questions arise, and many of them very difficult of solution; and their difficulty is very much increased by their complication with religious prejudices and political interests. *What* shall be taught, and *how* it shall be taught, has, for the last fifty years, been discussed, and often bitterly and uncharitably. How the instruction should be obtained, whether by public means, and the system be a public institution; or, by private and voluntary subscription, and the institution depend upon sectarian efforts and individual enterprise. And if it is to be a public system, how generally the benefits should be disposed, and how thorough the education should be. All these questions have been much discussed, and are all of great political importance.

It is more particularly to these questions I wish to address myself.

Is it true that a State has the right to educate her children? Or, in other words, has a State the right to put the hand of power into the pocket of one of her citizens and extract money to educate the children of another? It would seem to be a great stretch of governmental authority. It is nothing more nor less than the right of the State, of taking the property of one citizen and giving it directly to another.

This is the proposition, plainly but truly stated, and if it can not be fairly met, it should be abandoned.

The right does not rest on the ordinary principle of taxation. The exercise of the right by the State to levy taxes for the support of the government, is simply taking a part of the citizen's money, and laying it out *for his own benefit*, and his consent is presumed because the State can invest the money for his benefit and protection better than he could do it himself. Such is not the case in levying a school-tax. This is taking money directly from one, and giving it directly to another, and the miser might well ask what benefit it would be to him to have his neighbor's children grow wiser than he is himself.

The right of the State to educate her children—to take money from the few to educate the many—is more truly based upon *the necessity of the case*. It is an extraordinary right never exercised by any government in which general education is not neces-

sary to its existence. Governments always have, and always must, exercise every power necessary to their own preservation.

Where power is absolute, and the government is sustained by force instead of popular will—where the interest of the people is one thing, and the interest of the rulers another, there would be neither the right nor the disposition to establish a system of public schools. It is not necessary to the existence of such a government that the people should have schools, and no other principle could give the right to a State to exercise this extraordinary power. But it is the reverse in a free government like ours, and here again we are all agreed. The world's experience has taught us plainly that no republic can exist without intelligence among the people. The best and most valuable property belonging to a republican government is the intelligence of its people. Its public buildings, its public works, its public moneys, are useful to a Democracy; but it could exist to some extent without them; but the intelligence of its people is necessary to its hourly existence.

These considerations furnish reasons enough why free governments should exercise this very extraordinary right. If the exercise of such a power is necessary to the existence of a State, this necessity gives the right to exercise the power. And upon this principle many of our State governments have established their system of public schools. It is announced in their constitutions, in their statutes, by their public speakers, and by the press. It has become a fixed principle in our political system. The right being thus established, and our State having determined by the whole voice of her people, spoken through our late Constitutional Convention, that "Knowledge and learning, generally diffused throughout a community, are essential to the preservation of a free government," and that general, indeed that almost universal, opinion of our people having been several times since re-echoed by successive Legislatures in our State, the next question presented to the practical thinker is, *How far should that right be exercised, and how general and how thorough should be the education thus furnished by the State?* Should the schools be absolutely free, or should a part of the burden of their support be by voluntary subscriptions or individual enterprise? Should the education provided be thorough, and offer to every child in the State, whether rich or poor, a thorough, even a classical education, if he desire it? Or should it simply offer a

meager smattering of the primary branches, and, in the old phrase, educate her children by teaching them "Reading, Writing, and Arithmetic to the Rule of Three."

These are questions of vital importance to every person, to the rich as well as the poor, to the wise as well as to the ignorant.

It seems to be easily shown that our schools should be *wholly free*. In the first place, the wholly free system is the cheapest that has ever been tried. The truth of this proposition is fully established by the workings of the school system in England, where the public and private systems are in full vigor, and about equally divide the interest, affection, and support of the people. It will be found by an examination of their system, that the expense of educating the same number of children in the public schools is not more than half what it costs in their voluntary and private schools; and the children are better taught, and better trained, and the schools are much more reliable and available. In Massachusetts their system of education, with the exception of a few of their colleges, is wholly public and without charge, and the average cost of the education of their children is but about four dollars and fifty cents each, per annum, and their schools are kept up throughout the year, with only the necessary vacations. And this expense furnishes not only a primary education, but establishes and opens up to every child in the Commonwealth the opportunity to procure, without cost, a thorough, even a classical education. Three times the amount of money, if it were furnished and managed by private enterprise, would not provide such educational advantages for the people as Massachusetts now has. In this particular this enterprise differs from almost every other. A railroad, a bank, a manufactory, a store, or farm, can be managed infinitely better by private enterprise than by the State. It would be ruinous and wasteful for the State to undertake such business, as our own experience has sadly taught us. The peculiar qualifications and private interests of individuals better enable them to conduct successfully such enterprises. Such employments reward and sustain all persons connected with them. It is not so with schools; they are a *burden*; and that burden must be equally distributed and compulsory, before their support can ever become permanent.

A second great reason why our schools should be wholly free is the generality and equality of the system. The key-stone of our stability and our freedom is the spirit of equality among our people. It is the first foundation principle of our government. From the day that our forefathers announced the doctrine that as to certain great principles and primary rights, all men were equal, this spirit of equality has lived with our people, and been the saving grace of our republic. This spirit of equality, permeating every class of society, carries with it its kindred spirit of self-reliance, self-respect, and independence, without which no people can preserve their freedom. There is no one feature of our political or social system, that acts so powerfully in developing this vital principle of equality among us, as a universal system of public education. Some of the countries of the old world only attempt to educate those who can not educate themselves, and this is perfectly consistent for them, but would be a great error for us. With them it is important to keep up the distinctions in society. It would, indeed, strike a fatal blow at their aristocratic institutions, if their nobles and princes of the royal blood should be educated in a public free school, side by side with the children of mechanics and laborers, where, perchance, a clever child of a mechanic, or a bright boy of a laborer, would outstrip entirely the young lordling or the royal prince, and the coarsely-clad or ragged boy of some obscure home should stand at the head of his class, while the richly-attired little aristocrat or jeweled prince should be mortified with a position below him, or perhaps be driven by his stupidity to the foot of the class. This would never do for a monarchical or aristocratical government. A king or his nobles could never tolerate a system of education that would so utterly annihilate the distinctions and castes in society. Neither would a people educated on such principles tolerate *them*. How soon would the vigorous intellects of the middle and lower orders contract a contempt for the enervated children of luxury and fortune, if the one could thus be brought in contact with the other. Therefore, no monarchy or aristocracy will ever attempt or permit it.

But what is ruin for them is life and vitality for us. What would be death to a despotism, is preservation and prosperity for a Republic.

Nothing can so invigorate a democracy as a full recognition of the spirit of equality, and the intimate and actual brother-

hood of the race. Let all our children, from the highest to the lowest, begin life upon terms of the most perfect equality; let them meet in our schools upon a common footing; let them go side by side into the same classes, and study one with another the same branches; let the poor widow's son and the young millionaire be equally respected, and teach them by the spirit of your system to respect and love each other; let them go from infancy to manhood together, and their sports, their interests, their joys, their sorrows, and their affections be mingled and united in one mass during that period of their lives, and nothing in after life can separate them. Whether in after life fortune favors the poor boy and adversity robs the rich one, or whether the poor one remains poor and the rich one rich, yet will their interest in each other never abate; there will be a bond of union between them that can never be broken up.

No voluntary system of education, nor half free and half pay system, can ever produce such a result among our people.

Where all are left to educate themselves, the rich will have good and respectable schools, and the poor, poor ones or none at all.

And in a half free and half pay system, the ability of the rich to go steadily forward will separate them from the poorer classes, and thus the school-room, which ought to annihilate distinctions among us, becomes the fountain of caste in society, and a kind of separating knife that severs the bonds of union that should bind us together.

Another potent reason why our schools should be absolutely free and without charge, is the impossibility of either a voluntary or half pay system reaching the absolutely poor and destitute classes in society. There is always a class in every community suffering from the most oppressive poverty—whose subsistence is precarious—with whom the trials of every day are almost insurmountable—whose efforts to live cost them, day by day, every energy of their being, and with whom, to supply their physical necessities, is all they can expect or hope to accomplish.

To depend on this class to educate themselves, or even to assist materially in their own education, will continue to result as it always has resulted, and their ignorance and degradation remain a fixed fact. The degradation of their poverty will be

added to the degradation of their ignorance, until their physical necessities, combined with their feeble minds and clouded morality, plunge them into crime, and society at last is compelled to cut them off by means of the prison or the gallows, in self-defense.

This class with us is yet but small, compared with older States and older countries. Our danger from it is now so slight that it scarcely arrests our attention. But when Indianapolis shall become, or approximate to, a Birmingham, Fort Wayne a Manchester, and Lafayette a Leeds, and our country population continues to increase for fifty, or a hundred, or five hundred years, as it has for the last twenty, and this destitute class increases as it always increases with the growing of a State, our Indiana will then feel the danger of this crime-loaded, ignorant element of its population, and like all other States where education has not been general, will be compelled to resort to a strong government and a standing army to control its turbulence and quell its rebellion.

Now is the time for Indiana to guard against such consequences. Now, while our newly-organized society is in a plastic state—while our public institutions are being moulded—and the habits and sentiments of the people are being established, it will be comparatively a slight task to engraft upon our young State a school system that will remedy the evils resulting from ignorance, and to make that system as permanent as the State itself.

[We find the above in the drawer without any signature, but are of the opinion that it originated in that part of the State that got up a Free-School Pic-Nic.—ED.]

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#### AN INCIDENT.

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AN Incident of my school-days has imprinted itself deeply on my mind, and it may be it has its lesson for others as well as for myself.

My teacher was one whom I loved and reverenced, for he was the first one who had unsealed for me the mysteries that had darkened before me for many a previous hour. He had by a few

kind words thrown light upon many a difficult subject, and made it a delight to me to study earnestly, that I might discover more and more of the hidden treasures he had taught me I might have for the asking. I loved him, but the respect he inspired was an awe which forbade all confidence expressed in words. I think he must have appreciated my wish to learn—my desire to please him, for he was always indulgent to me, and the only time I can recollect a reproof from him, is the time to which I allude. I was fond of reading, and fortunately for me, I had read but few mere stories. Some one had lent me a novel, and had spoken of it in glowing terms; I had heard the book spoken of by gentlemen and ladies, as an effort of genius, a brilliant display of talent, a wonderful book, &c., and I had commenced its perusal with great expectations.

I became so much absorbed by the interest of the plot, that on this unlucky day, I thought to gain something by devoting the recess to my fascinating book. And so I sat in my seat, with my elbow in my desk, ready to toss in the book when the bell struck. But I forgot everything except my story, and heard no bell, being aroused only by the perfect quietness of the room. I looked up quickly, just as the teacher had begun to call my name and request me to bring the book to him. In the first instant I had flung the book on the floor, and my kindly-meaning desk-mate and others gave it still further impulse. Immediately as I understood his order, I stooped to take it from the floor, for I dared not disobey, but it was beyond my reach, and in the fright and confusion I stammered out, "I don't know where it is." He merely repeated his command, and as the book had by this time been passed back and handed to me by some one, I at last obeyed him. He took the book, allowing me to return to my seat, and then opening the book, he read some passages from it, commenting upon them with a mixture of sarcasm and bitter ridicule, referring to my taste in the selection, &c. He then went on to speak of the great fault of which I had been guilty, and the several offenses to which the violation of one rule had led—reading such a book—sitting with the desk-cover open—reading a book, which was not a school-book, in study-hour, and worse than all, had been guilty of telling a lie in professing not to know where the book was. I listened to his words, feeling that my offense deserved it all, and while my head was bowed with shame, I reproached myself, and penitently resolved

never again to be so guilty. But when he accused me of the fault I had been taught to consider the meanest of sins, all the passion in my nature was roused, and I sprang to my feet, exclaiming, "I did not tell a lie—it was the truth!" and then sunk to my seat to sob with passion, and to say in my heart, "I will never acknowledge to him until he retracts this charge." Not another word was spoken by the teacher.

I have no recollection how we glided into the usual school-routine. My teacher sought, by kindness, to remove the evil from my heart, but never, by word, alluded to the affair. Had he done so, my proud heart would have melted, and gladly would I have acknowledged my fault and been forgiven—gladly forgiven and forgotten what I termed his injustice.

Since then I have often wished I might see him again and acknowledge all this, for even at this day, I know I should be happier if I knew that all was explained, and that he did not think I told a lie.

H. P. H.

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### PHYSICAL DEGENERACY.

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It has been popular for a long time to represent the inhabitants of this country as undergoing physical degeneration. Educational, medical, and other journals print essays, showing how the decay may be arrested. The introduction of athletic games, archery, and other exercises into school discipline, are constantly recommended by "progressive educators." A physician of Detroit has published a pamphlet setting forth that our imperfect system of education is one of the principal causes of the physical degeneracy of our people. This is probably not unjust; our teachers not only instruct too much and educate too little, but confine their efforts to the intellect, to the neglect of the body. Such a state of things, so far as it exists, should receive attention.

But it may be doubted whether this great degeneracy really exists. We will not deny that there is a margin for improvement; but is it not quite probable that our people, even now, are

making upward progress? Is the average duration of life shortening? It may be that we have fewer old men and old women, but a larger proportion of children attain maturity than formerly. Statistics indicate that the ratio of mortality is actually on the decrease. It must be admitted, then, that our people possess a larger aggregate of vitality, though perhaps exhibiting fewer "remarkable instances of longevity." The French nation has lost two inches and more in average stature within fifty years, while the Americans are taller than their European progenitors. It is argued that we have less fat upon our muscles, and that we exhibit signs of overtired energies. The rapidity with which we make our way in the world shows the possession of high vital stamina; while accumulations of fat are only proof that there is an inactivity of the vital functions. Lean men will generally endure severer privation, and they are more ready for physical and mental exertion than the fleshy. The dread which Cæsar entertained of Cassius is the tribute paid to the men who really perform most of the work of the world.

It is true that Americans "study much," and that severe mental labor taxes the energies. But few persons die from this cause, for the most laborious students the world over have been the longest lived. Only when bad habits have existed, or other duties to the mind have been neglected, has much study resulted in deterioration of the health. They are mistaken who imagine that mental development involves physical degeneracy. Without intellectual cultivation, the liability is far greater. Thus, in our prisons, the labor, though forced, is less severe than that of farmers and mechanics, merchants and editors; and very often the apartments are better ventilated than our residences and school-houses. Yet convicts are of a lower type of health than people outside pursuing similar employments.

In unfavorable localities, particularly in cities densely populated, there exist many counterbalancing circumstances. There is not that equal distribution of labor which is necessary to develop the highest physical power. Fashions of dress are often pernicious: so are residences, public buildings, and workshops, when badly constructed and located in unhealthy places. But these evils may be obviated, and such examples are not illustrative of the general principle.

The immigrants added to our population do not appear to equal our own people in vital power. Epidemics are more fatal

among them, more of them die in early life, and they are less able to do manual labor. At the plow and hoe, the axe and carpenter's plane, in the haying and harvest field, Americans will achieve more in a given time than they. The Arab and Tartar are not our equals in powers of endurance. Even the Indian possesses a smaller stock of vitality, and fails when required to perform stated labor.

The energy of our people is due to the high cultivation of their faculties. So far from being in a state of decadence, they are yet in early manhood, with an eventful future before them. Luxuries that kings could not afford, five centuries ago, are now enjoyed by our common laborers. The comforts of life in profusion are in our grasp. We have much to learn yet, but our attainments are neither small nor unimportant; and not among the least of these is the enhancement of our stock of vital power.—*N. Y. Evening Post.*

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#### LIEBIG.

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A correspondent of the *Rural New-Yorker* gives the following description of Liebig, the Agricultural chemist :

"On the last day which I passed in Munich, I went to hear the world-renowned chemist, Liebig, lecture. His laboratory and lecture-room are in the same house in which he resides. When he entered the lecture-room, the students all rose up to receive him, and he acknowledged their attention with a polite bow. He wore a black dress-coat and white pantaloons. Liebig is a fine, intellectual-looking man, tall, though not broad; has iron-gray hair, which has fallen off from his broad and projecting forehead; he wears no beard. He lectures in a very conversational manner, part of the time sitting; makes many gestures, and good ones, too. His face is expressive. He is indeed a good deal of an orator, and, perhaps, the best popular lecturer in Germany. Liebig was fifty-seven years old on the 12th of May, 1858. He was born in Darmstadt, and at the age of twen-

ty-one was made Professor at Giessen. In 1852 he came to Munich. Between the years 1832 and 1856 he published 177 papers, many of which are very elaborate. He is said to be proud and overbearing; he is, however, on the side of progress, and heads the reform party in the University.

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## PUNCTUATION.

BY THE EDITOR.

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The subject of Punctuation being discussed in the latter part of works upon grammar, it generally happens that students do not reach it, or if they do, it is at the close of the term, when they are compelled to go over the subject in a few lessons. A subject so important should not thus be slighted. We are satisfied that a careful study of *Wilson's Punctuation*, a book of 334 pages, would result in the acquirement of much practical knowledge. A knowledge of Punctuation is *essential* to type-setters and proof-readers, but it should not be inferred that such knowledge must be confined to them, and that copy may, therefore, be sent to the printer unpunctuated. It is very common now-a-days for authors to make up for their ignorance of Punctuation by using the dash when they do not know what else to use. The compositor, or the proof-reader, may not in many cases be able to decide our meaning, if we neglect to punctuate. Suppose we had written in our notice of the State Meeting in the last number, page 259, "Addresses were made by Barnabas Hobbs the President Prof. John Young Hon. R. W. Thompson and the Rev. Jos. G. Wilson;" how would the compositor have known whether Hobbs or Young was the President, or whether either was the President. We will punctuate the sentence according to these three ideas: "Addresses were made by Barnabas Hobbs the President, Prof. John Young, Hon. R. W. Thompson, and the Rev. Jos. G. Wilson;" "Addresses were made by Barnabas Hobbs, the President Prof. John Young, Hon. R. W. Thompson, and the Rev. Jos. G. Wilson," and "Addresses were made by Barnabas Hobbs, the President, Prof. John Young, Hon. R. W. Thompson, and the Rev. Jos. G. Wilson." The first idea might

also be brought out by writing "Barnabas Hobbs (the President)," &c. This style we did actually use on the next page, in our notice of the Ohio State Meeting, in the sentence "Addresses were delivered by the President (M. F. Coudery), Prof. Robert Allyn, of Ohio University, formerly Superintendent of Schools in Rhode Island, and Rev. D. W. Clark, Editor of the Ladies' Repository." We may also punctuate the sentence as follows: "Addresses were made by Barnabas Hobbs, the President; Prof. John Young; Hon. R. W. Thompson; and the Rev. Jos. G. Wilson."

For the convenience of those teachers who desire to impress upon their pupils the importance of Punctuation, the following illustrative examples have been collected:

"Lord Palmerston then entered on his head; a white hat upon his feet; large but well-polished boots upon his brow; a dark cloud in his hand; his faithful walking-stick in his eye; a meaning glare saying nothing. He sat down."

Observe now how a lie can be converted to a truth by being differently pointed:

"Lord Palmerston then entered; on his head, a white hat; upon his feet, large, but well-polished boots; upon his brow, a dark cloud; in his hand, his faithful walking-stick; in his eye, a meaning glare; saying nothing, he sat down."

I saw a pigeon making bread;  
I saw a girl composed of thread;  
I saw a towel one mile square;  
I saw a meadow in the air;  
I saw a rocket walk a mile;  
I saw a pony make a file;  
I saw a blacksmith in a box;  
I saw an orange kill an ox;  
I saw a butcher made of steel;  
I saw a penknife dance a reel;  
I saw a sailor twelve feet high;  
I saw a ladder in a pie;  
I saw an apple fly away;  
I saw a sparrow making hay;  
I saw a farmer like a dog;  
I saw a puppy mixing grog;  
I saw three men who saw these too,  
And will confirm what I tell you.

By giving another punctuation, a change in the meaning is very apparent:

I saw a pigeon; making bread,  
 I saw a girl; composed of thread,  
 I saw a towel; one mile square,  
 I saw a meadow; in the air,  
 I saw a rocket; walk a mile,  
 I saw a pony; make a file,  
 I saw a blacksmith; in a box,  
 I saw an orange; kill an ox,  
 I saw a butcher; made of steel,  
 I saw a penknife; dance a reel,  
 I saw a sailor; twelve feet high,  
 I saw a ladder; in a pie,  
 I saw an apple; fly away,  
 I saw a sparrow; making hay,  
 I saw a farmer; like a dog,  
 I saw a puppy; mixing grog,  
 I saw three men who saw these too,  
 And will confirm what I tell you.

It should be observed that this mode of punctuating the above renders some of the sentences ambiguous. Does "making bread, I saw a girl," mean "when I was making bread, I saw a girl," or, "I saw a girl making bread"? The same question might be asked concerning several other of the sentences.

In No. 742 of Littell's Living Age (14th August, 1858), we find in an article on "*Ghosts of the Old and New School*," from *The National Review*, the following sentence:

"They grasp a spectre as if it were a walking stick, and hold a disembodied spirit hard and fast by the button."

There should have been a hyphen between "walking" and "stick" if the writer meant a *cane*, but if he meant a stick that was walking, it is right as it is.

The hyphen will frequently produce quite a change in the meaning of a phrase or sentence. The New York Tribune, The Broad Axe of Freedom, Green Mountain Boys, and An Intellectual Arithmetic Class, mean a new Tribune published at York, an Axe-of-Freedom that is broad, mountain boys that are green, and an Arithmetic Class that is intellectual: but The New-York Tribune, The Broad-Axe of Freedom, Green-Mountain Boys, and An Intellectual-Arithmetic Class have quite a different signification.

Observe the effect of the use of a comma in the following sentences :

George Washington was a great general ; Mary Jane has lost her book ; Thomas Charles went to College ; and Boys go to school ; which become : George, Washington was a great general ; Mary, Jane has lost her book ; Thomas, Charles went to college ; and Boys, go to school.

A hair-dresser put in his window a placard worded thus :

“What do you think  
I'll shave you for nothing  
And give you some drink,”

which a blacksmith, seeing, read as follows :

“What do you think?—  
I'll shave you for nothing,  
And give you some drink.”

Such an opportunity for the removal of his huge capillary excrecence and the satisfying of an imbibitional desire, he thought ought not to be lost. After the tonsorial operation had been performed, he called for the expected liquor ; but the barber demanded pay for the shaving. The blacksmith referred in stentorian voice to the placard, which the *shaver* produced and read as follows :

“What! do you think  
I'll shave you for nothing,  
And give you some drink?”

That barber was a *shaver* in more than one sense.

“There is a lady in the land  
Who has twenty nails on each hand ;  
Five and twenty, on her hands and feet.  
All this is true, without deceit.”

This has never been corroborated, but the following is surely true :

“There is a lady in this land  
Who has twenty nails ; on each hand,  
Five ; and twenty on her hands and feet,  
All *this* is true, without deceit.”

“SMITH & HUGGS—SELECT SCHOOL.—*Smith teaches the Boys, and Huggs the Girls.*” This is said to be a notice which swings upon a sign somewhere in the western country. The reader will

see from the orthography that a comma should be inserted after the proper noun "*Huggs*," because there is an ellipsis of the word *teaches*; but the hearer might understand it to mean "*Smith teaches the boys and hugs the girls*."

Capt. Marryatt, in his *Diary in America*, Vol. II, p. 43, relates that there were two lawyers in partnership in New York, whose names were *Catchem* and *Chetum*. The people laughed at the juxtaposition of the names over the office-door, and the lawyers therefore resolved to have the sign read *Isaac Catchem* and *Uriah Chetum*; but the board which was sent to the painter being too short, he inserted only the initials, *I.* and *U.*, thus making the sign read

"I. CATCHEM & U. CHETUM."

This punctuation is right to the eye, but rather equivocal to the ear.

Observe the effect of punctuation in the following :

"The persons in the coach were Mr. Miller; a clergyman; his son; a lawyer; Mr. Angelo; a foreigner; his lady; and a little child."

"The persons inside the coach were Mr. Miller; a clergyman, his son; a lawyer, Mr. Angelo; a foreigner, his lady; and a little child."

"The persons inside the coach were Mr. Miller, a clergyman; his son, a lawyer; Mr. Angelo, a foreigner; his lady; and a little child."

Several other modes of punctuating this sentence may be adopted, which will give still other meanings.

"Mr. Jared Hurton having gone to sea his wife, desires the prayers of this church for his safe return."

"Mr. Jared Hurton having gone to sea, his wife desires the prayers of this church for his safe return."

In a school circular recently issued, we find the following sentence, which is left for comment :

"The village contains about 600 inhabitants, of sound morals, and is one of the healthiest places in the State."

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BENEFITS grow old early, but injuries are prodigiously long-lived.

## UNCLE SAM'S SCHOOL.

A PARODY—WRITTEN FOR THE SCHOOLS.

Of all the institutions  
In the East, or in the West,  
The glorious institution  
Of the school-room is the best.  
There is room for every scholar,  
And our banner is unfurled,  
With a general invitation  
To the people of the world.

Then come along, come along, make no delay,  
Come from every dwelling, come from every way,  
Bring your slate and books along, do n't be a fool,  
For Uncle Sam is rich enough to send us all to school.

Come from where the mighty waters  
Of the broad St. Lawrence flow;  
Come from Florida and Kansas,  
Come from Maine and Mexico.  
Come and welcome to the school-room,  
From the wide Atlantic shore,  
To the golden region, where they hear,  
The old Pacific roar.

Then come along, &c.

We will read, and spell, and cipher;  
Write, and think when thoughts are free;  
And in study, with attention,  
Carve a noble destiny.  
Our motto is Excelsior;  
And with our motives true,  
We will leave the world the wiser  
When we pass our lifetime through.  
Then come along, &c.

Our fathers gave us liberty,  
But little did they dream  
Of the great results to follow  
In this mighty age of steam.  
With the match of Education  
All the world is set on fire,  
And we knit our thoughts together  
With a telegraphic wire.

Then come along, &c.

While Europe's in commotion—  
 Her monarchs in a fret—  
 We are teaching them a lesson  
 Which they never can forget.  
 Ah! this they fast are learning,  
 Uncle Sam is not a fool;  
 For the people do the voting—  
 And the children go to school.  
 Then come along, &c.

The wise in every nation  
 Are joining, heart and hand,  
 To spread the love of knowledge,  
 And of freedom o'er the land;  
 And Uncle Sam is anxious  
 That his children all should be  
 Of the wisest and the bravest,  
 And most worthy to be free.  
 Then come along, &c.

Come, join our swelling numbers,  
 And advance with us along—  
 We will all, in friendly union,  
 Sing in wisdom's way a song;  
 Until every land re-echo  
 With the free and joyous call,  
 Come ye to the fount of knowledge—  
 There's a welcome for you all.  
 Then come along, &c.

[*Selected.*

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## FEMALE ACCOMPLISHMENTS.

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Every school for young ladies rejoices in its teacher of drawing, painting, &c., as well as its teacher of music; and, under the hands of those individuals, the whole school, as a general thing, is desired to pass by teachers and parents. French is studied as an accomplishment. The result usually is, that when a young lady is "finished off," she can play six tunes on the piano; has executed three pieces of drawing or painting, which papa buys frames for, and hangs up in a parlor for exhibition to

visitors ; has done a little portfolio of water colors, in which the teacher's hand is frequently visible ; has learned to dance ; and has achieved a free run of nineteen French phrases, which she could not pronounce correctly to save her life. So far, there is nothing but show. Principles have not been comprehended, and she has in her hands nothing, not even the instruments for winning the accomplishments which she and her friends imagine she possesses. How many misses can sketch from nature ? How many, who return home "accomplished," can sketch the old domicile in which they were reared ? How many can paint the tiger-lily that occupies a corner of the garden ? How many can take a simple piece of music, and play and sing it at first sight ? How many go on from the foothold they have achieved, and become mistresses of the delightful art, soothing the husband when weary and alone, or entertaining his friends when they call upon him ? How many read a French book after leaving school ? We suppose not one in fifty. Their accomplishments are a gilded cheat. The money spent to obtain them is a dead loss ; and the time which they have occupied should have been devoted to more solid studies, in which three-fourths are deficient, from the simple fact that their time has been so unprofitably occupied.—*Exchange.*

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#### HAMILTON COUNTY TEACHERS' ASSOCIATION.

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Pursuant of an appointment of the Hamilton County Teachers' Association for the organization of a Teachers' Institute, several teachers, and others interested in the cause of education, met in Noblesville on the morning of the 16th of August. Prof. D. H. Roberts, of Pendleton, who had previously been engaged as Superintendent, called the house to order, and Enos Doan was chosen Secretary.

The following course of daily exercise was continued with little variation throughout the session :

1. Opening by reading from the Bible.
2. Orthography, conducted by Jas. Oldakre.
3. Practical Arithmetic, " " Enos Doan.

4. Penmanship, conducted by N. H. Mills.
5. English Grammar, " " Enos Doan:
6. Reading, " " Ephraim Doan.
7. Mental Arithmetic, " " Zenas Cary, jr.
8. Natural Philosophy, " " " "
9. Elocutionary exercise " " Susan Moss.
10. Theory and Practice of Teaching, conducted by A. P. Howe.
11. Geography, conducted by Orelia Cross.

The course of exercises were conducted in such a manner as to illustrate the various methods adopted by different teachers in their schools for teaching the above-mentioned sciences. After each exercise, discussions ensued, which were conducted with such spirit and ingenuity as to produce a deep and constant interest in the Institute. Able and interesting speeches were delivered before the Institute by S. T. Bowen, of Indianapolis, Dr. Boyd, of Terre Haute, and Prof. J. Young, of Indianapolis.

Lectures were also delivered on each evening during the session by the following speakers :

1. D. H. Roberts, on "Education as connected with Farm-Life."
2. Rev. James McCoy, on "The Advantages of Education to the Masses."
3. S. T. Bowen, on "The Best Method of Teaching."
4. Prof. Oakley, on "The Necessity of the Americans Cultivating the Sciences."
5. Prof. J. Young, on "The Teacher's Profession, and Education in General."

Several resolutions of local interest were presented and adopted through the course of the Institute, and after a protracted discussion on the subject of Corporal Punishment in Schools, the following was offered, but lost by a majority of ONE :

*Resolved*, That we, the members of the Hamilton County Teachers' Institute, will henceforward use our utmost endeavors to *banish corporal punishment* from our schools.

The Institute numbered forty-two members, mostly teachers.

The Institute, after a harmonious session of five days, adjourned on the evening of the 20th.

By order of the Institute.

ENOS DOAN, Sec'y.

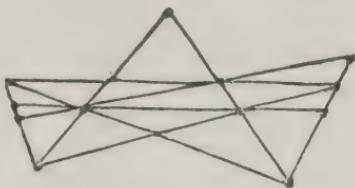
D. H. ROBERTS, PRES'T.

## MATHEMATICAL DEPARTMENT.

W. D. HENKLE, Editor.

SOLUTION OF No. 80.—By J. POOL.

Mr. Pool furnishes the following diagram, which will sufficiently explain itself:



[The above problem was numbered 77 instead of 80, as it should have been.]

SOLUTION OF Q.—By SAMUEL ALSOP.

The distance from the point  $(1, 2, 3)$  to the plane is  $1\frac{1}{3}\sqrt{3}$ . The co-ordinates of the foot of the perpendicular to the plane from the given point, are  $2\frac{1}{3}, 3\frac{1}{3}, 4\frac{1}{3}$ . The distance from this point to the center of the circle is  $\frac{1}{3}\sqrt{6}$ , whence the distance from the same point to the circumference is  $6 - \frac{1}{3}\sqrt{6}$ . The required distance is therefore  $\sqrt{42 - 4\sqrt{6}}$ .

[*Staff* solves it thus: "The equations of the line passing through the two given points, are  $x=z-2$ , and  $y=2z-4$ . Distance between the points,  $\sqrt{6}$ ; and the angle made by this line and the plane is  $45^\circ$ . (See formulæ 3, 1 and 16, B. VIII, Davies's An. Geom.) Then we have the given radius 6 as one side of a triangle, the distance between the given points  $\sqrt{6}$  as another side, and their included angle  $45^\circ$ , to find the third side, which can be easily found arithmetically. It is 4.6065 the required distance. We need hardly remark that the point  $2, 4, 4$  is *necessarily* in the plane, and not *conditionally*."

[*Hough* says: "I do not fully understand the notation used in this problem. Neither do I know whether the 'center' only of the circle must be in the plane, or the circle itself." He infers from the language used, "that the author intended to have the circle

in a different plane." He refers for the general solution to "Laurent's Calcul Differentiel," p. 237, prob. x. "The conclusion is, 'The shortest or longest line that can be drawn from a given point to a curve, must be normal to a curve.'"

It may be seen that the numerical results given by Alsop and Staff are different. We have not taken the time to ascertain whether the difference is caused by a miscalculation or by a difference in the principles of solution.]

#### SOLUTION OF No. 81.—By J. STAFF.

The five payments and interest amount to 1,015 dollars. \$100 will amount in five months to 103.75. Hence as  $103.75 : 1015 :: 100 : \$978.31$ —the required principal.

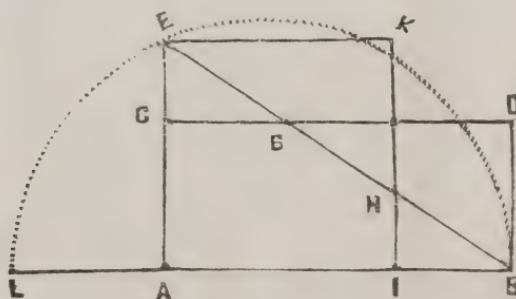
[This problem was solved in the same way by *W. Downs*. *Alsop* says: "The principal is the present worth of a monthly payment of 200 for five months at .75 per cent. per month. This may be found by rules given in nearly every arithmetic."

*Hough* says: "Find the present worth of \$200 for one month: then add \$200 to that and find the present worth as before, and the same for all the payments. We get as our final result \$977.887—nearly."

[This problem is the last in "Ray's Higher Arithmetic," and the answer there given is \$978.04.—ED.]

#### SOLUTION OF No. 75.—By THE EDITOR.

As some of our correspondents have devoted much time to this problem, but have failed to get the right number of pieces, we give the following solution :



Let ABDC represent the board. Produce BA till AL=AC, and on LB as a diameter describe a semi-circle and produce AC to E; then will AE—the side of a square which is equivalent to ABDC. Describe a square on AE as a side, and draw EB. Now the three pieces, ACGHI, HIB, and GDB, of the board are respectively equal to the three pieces, ACGHI, ECG, and EKH, of the square. The proof is very simple.

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**ACKNOWLEDGMENTS.**—*Staff* has sent solutions to Nos. 75, 77, and 79. *Alsop* writes: “I observe that it is thought that *I* have mistaken the terms of the problem (No. 77). I adhere to my position. As it is a matter of verbal criticism primarily, let us examine the query, ‘How long will it respectively be,’ &c. Now I submit that this phrase simply means ‘how long will it be,’ and nothing more, for ‘respectively’ in this connexion means nothing at all. It is a distributive, the force of which is to distribute, if I may so speak, the substantive of the verb. But that substantive, being *it*, is indivisible. The adverb is, therefore, redundant. By no rule of construction can it be made to apply to each.

“Suppose, however, the writer had been more careful, and had written ‘how long will it be before each respectively,’ &c. How would this have affected the meaning? Each is a distributive adjective pronoun. Does *respectively* alter the signification so as to make it mean that only one at a time is equally distant from the other two? I think not. When they are  $120^{\circ}$  apart, then each (respectively, if you will) is equally distant from the others. Had the question read ‘How long will it be before any one is equally distant from the other two,’ it would have been clear, and the solution simple.”

Although we are not prepared to defend the language of the question as the best possible, still we contend that in nine cases out of ten the mathematician would consider, as three hands are referred to, that the use of respectively in the final question indicates that it is the embodiment of three questions, and that, therefore, three answers are demanded. It is hardly proper to assert absolutely that *it* is indivisible, because it has what are called anomalous uses, as “*it is they*,” &c.

PROBLEM No. 86.—By SAMUEL ALSOP.

Given the length and weight of the string of a kite, the angle which it makes with the horizon at the hand, and its tension, to determine the height of the kite, the wind being supposed to blow with the same velocity in all the strata of air, supposed likewise to be of the same density.

PROBLEM No. 87.—By J. Pool.

What is the area of a circle around which a log that is 10 inches in diameter at one end and 9 at the other, would roll, and come back to the place of starting?

PROBLEM No. 88.—By the Editor.

The duty on 150 barrels of sugar is \$6 less than the price of two barrels, and the duty on 240 barrels is \$15 more than the price of two barrels. What is the value of sugar per barrel?

(A mental solution is required.)

SOLUTION OF No. 77.—By S. C. CRUMBAUGH.

A man buys stock at 20 per cent. discount, and sells it at 15 per cent. discount, and receives his pay in gold at 2 per cent. premium. What per cent. did he make on his investment?

PROBLEM No. 90.—By J. E. HENDBICKS.

Do terrestrial projectiles move in parabolic or elliptic curves?

## MATHEMATICAL WORKS.

(Continued.)

184-185. *Hutton's Mathematics*, Vol. I, pp. 612, Vol. II, pp. 640, New York: W. E. Dean, 1831. (Copy-righted in 1821.)

186. *Rutherford's Hutton's Mathematics*, pp. 895, London: 1854.

187. *Riddle's Hutton's Recreations in Mathematics*, pp. 826, London: 1840.

188-189. *Francœur's Mathematics*, Vol. I, pp. 408, Vol. II, pp. 480, Cambridge, Eng.: 1829.

190. *Robinson's Math. Recreations*, pp. 86, Albany: Erastus H. Pease & Co., 1851. (Copy-righted in 1851.)

191. *Byrne's Proportion*, pp. 98, London: 1841.
192. *Mathematical Problems and Examples from the Senate-House Examination Papers*, 1821 to 1837, pp. 365, Cambridge: 1827.
193. *Bland's Philosophical Problems*, pp. 374, London: 1830.
194. *Peacock's Treatise on Logarithms*, pp. 55, Cambridge: 1812.
195. *Day's Trigonometry and Mensuration*, pp. 337, New York: Mark H. Newman & Co., 1848. (Copy-righted in 1848.)
196. *Day's Mensuration*, pp. 96, New Haven: Durrie & Peck, 1839. (Copy-righted in 1831.)
197. *Bonncastle's Mensuration*, pp. 288, Philadelphia: Thomas, Cowperthwait & Co. (Copy-righted in 1833.)
198. *Hallowell's Key to Bonncastle's Mensuration*, pp. 88, Philadelphia: Kimber & Sharpless, 1839. (Copy-righted in 1824.)
199. *A Treatise on Mensuration*, pp. 262, Dublin: 1845.
200. *Vogdes's Mensuration*, pp. 299, Philadelphia: E. C. & J. Biddle, 1847. (Copy-righted in 1846.)
201. *Byrne's Logarithms*, pp. 82, New York: D. Appleton & Co., 1849. (Copy-righted in 1849.)
202. *Engineer's Pocket Guide*, pp. 178, Boston: Phillips, Sampson & Co., 1851. (Copy-righted in 1831.)
203. *Lacroix's Calcul des Probabilités*, pp. 352, Paris: 1833.
204. *Newton's Principia*, translated by Motte, pp. 571, New York: Dan. Adee. (Copy-righted in 1846.)
205. *Barrow's Archimedis Opera*, pp. 285; *Apollonii Conica*, pp. 104; *Theodosii Spherica*, pp. 38, Londini, 1775.

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## EDITORIAL MISCELLANY.

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### S C H O O L S.

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How different the opening of Schools in the cities and towns of Indiana in September, 1857, and September, 1858! In 1857, the public school-houses could not accommodate all the eager pupils that sought admission to the temple of knowledge. We have never had our sympathies more aroused than last year when admitting pupils to the Richmond Public School. While some of the applicants came forward with boldness to secure their places, others came tremblingly to ask for a seat at the table which a wise community had spread with intellectual food free to all. The latter were either orphans or the children of poor parents. It gave us more pleasure to provide places for such applicants than for the children

of the rich. If any one had come into our office and opposed free common schools in the presence of such applicants, we would have considered it sacrilege. We always felt, on such occasions, like exclaiming, "God bless Free Schools." Indeed, we believe free schools to be a heavenly institution, a crowning act of political wisdom, and one of the highest exhibitions of Christian benevolence. From this bright and holy picture let us turn to contemplate the present. Where are the free schools now in our towns? How have the schools opened in September, 1858? We believe that there are not one-half as many pupils in school now as there were last year at the same time. The children of the poor are not in school, nor indeed are there as many children of the rich as last year, such has been the paralyzing effect of the almost total destruction of the Free Schools. Innumerable private and so-called "Select Schools" have sprung up in the places of the Free Schools. These private schools are most frequently kept, we will not say taught, by incompetent young misses who teach for a low price, or by teachers that could not obtain employment in the Free Schools because they could not pass the necessary examination. What a god-send the present state of affairs is to this class of persons. "It is an ill wind," &c. Now every one may teach, because free schools do not exist as competitors, and the nearer the approach these teachers make to the free system, the more prosperous they expect to be. But as everybody has an aunt, cousin, or special friend that wants to teach a little, the interest of the community is divided, and instead of there being the proper number of well-filled schools, there are a great many small schools. This state of things prevents the prosperity of schools that are managed by competent instructors, and who are compelled to charge higher prices to secure anything like a fair remuneration for their services. This state of things exists no doubt in every town in the State, the worst phases being in the largest towns.

The Trustees in our different cities are daily asked whether something is not to be done for the re-establishment of Free Schools. The most that can possibly be done will not give us Free Schools in less than a year. But this will not be done, and all we dare hope from the Legislature is an increased tax of one mill upon the dollar, which will furnish some relief. This relief, however, will not come, unless the people make their legislators feel that they must act in this matter, and act liberally, too. We earnestly hope that all the friends of Free Schools will go to work to accomplish something by bringing every honorable appliance to bear to make our next Legislature one that will be distinguished as a Free-School Legislature.

**HAMLINE UNIVERSITY.**—We have received the catalogue of this institution "for the Collegiate year 1858-9." Among the Faculty we notice E. E. EDWARDS, Professor of Languages, and H. B. Wilson, Professor of Mathematics. The latter gentleman is extensively known in Indiana, and has but recently left our State. His glowing description of the Upper

Mississippi, in the May number of the *Journal*, will be distinctly remembered by our readers. Mr. Edwards was formerly President of White-water College, Centreville, Ind., and his sprightly productions will long be remembered by the Wayne-county Teachers' Association. The whole number of students in the Primary Department is 56; in the Preparatory Department, 69; and in the Collegiate Department, 18. Thus does the young State of Minnesota start in what we hope will be a prosperous educational career.

WESTERN MANUAL-LABOR SCHOOL.—This school is situated at Annapolis, Parke county, Ind. BARNABAS C. HOBBS, the respected President of our State Association, is Principal, and is to be assisted, the coming year, by Daniel W. Hunt, A. B., and Ann H. Kersey. The whole number of students last year was 168. The Academic course of three years is very full, and students will have to study hard to complete it. "The Autumn Session will commence on 4th of 10th month, and close the 31st of 12th month, 1858."

All that is said in the Catalogue in reference to that which gives the distinctive title to the School is contained in the following sentences: "A small farm is connected with the School, which is designed to afford profitable labor for young men during their attendance at school." "Many young men and women have greatly curtailed their expenses by labor. The supply of work at a fair price, is, generally, quite equal to the demand. An axman can generally find work at all seasons, at a fair price, and hoes are in much demand in summer."

LIBERTY SEMINARY AND NORMAL SCHOOL.—The second year of this Institution opened on the 30th of August, under the control of that *live* teacher, JOSIAH HURTY, A. M. The lectures on Practical Teaching, which Mr. Hurty will deliver, will be well worth listening to.

TEACHERS' INSTITUTE.—We learn from the Liberty Herald that an Institute was to commence Aug. 23, in the Seminary at Liberty. Addresses were to be delivered by Rev. G. A. Chase, of Brookville College, Prof. J. C. Christin, of Oxford, Dr. Chitwood, and Dr. Z. Casterline, and Essays to be read by Miss Emily John, and Messrs. Bennett, Gard, and Barnard.

The following subjects were to be discussed :

1. Methods of conducting recitations.
2. How can teachers best awaken the interest of pupils and parents?
3. Would the interests of education in our State be promoted, were the law authorizing taxation for school purposes repealed?
4. What rules should we observe respecting corporal punishment?
5. How can the standard of qualifications of teachers be raised, and the compensation for teaching increased to an equality with other professions?

BAINBRIDGE MALE AND FEMALE ACADEMY.—This Institution has just been established. The first session will open on the 23d of September, 1858. The Principal, D. Eckley Hunter, is to be assisted by Misses Stowell and Burbank. Miss Stowell was a teacher in the Richmond Public School at the time of the fatal decision.

Lectures will be delivered on the Theory and Practice of Teaching.

RICHMOND HIGH SCHOOL.—We learn from a Richmond paper (The Broad-Axe of Freedom) that Messrs. Crumbaugh and Grant, as joint Principals, are about to open a High School in Richmond, in the Public School Building. We know that these gentlemen are good teachers. Miss Hattie Grant is to take charge of the Primary Department.

INDIANAPOLIS HIGH SCHOOL.—This School was opened Aug. 30th, 1858. For particulars, see advertisement on the second page of the cover of this *Journal*.

MCLANE FEMALE SEMINARY.—This Institution, with which the Chairman of our Executive Committee, Mr. Chas. N. Todd, is connected, opened Sept. 6, 1858.

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#### NATURAL PHILOSOPHY.

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In the July number we gave some criticisms which had been made in Emerson's Magazine, on *Comstock's Philosophy*. One of our correspondents who signs himself *A.*, says: "I was much pleased to see the remarks respecting 'Comstock's Philosophy.' The book is one, every page of which bears evidence of its being a 'made-up' book—the scissors having much more to do with its manufacture than the brain. The earlier editions were arranged with something approaching to a system, but as the author met with new facts, he appears to have jotted them in wherever chance seemed to lead him.

"Notwithstanding all the defects, the work maintains its place, principally, I think, because it is written in an easy style, and is very *popular*; that is, it has very little science in it."

We now proceed to the answer which the writer in the magazine gives to his second question, "To what extent is ACCURACY of fact and principle observed?"

This answer will be given in his own words, and we ask our readers to follow the critic closely, to ascertain whether he does not also say things that will not bear the test of just criticism:

"On page 8, we read, 'Figure or form is the result of extension.' Not exactly: a substance or mass might extend infinitely; it would then have no form. The form is really the result, not of extension, but of the *limits* of extension. The limiting surfaces determine whether a body shall be

a cube or a sphere, regular or amorphous. Page 11: 'Either state [rest or motion] depends entirely on circumstances.' Not philosophically expressed: either state depends on the amount and direction of the forces acting upon the body. These, if not balanced, give motion; if balanced, i. e., equal and opposite, rest. Page 12: in the experiment of snapping a card from beneath the finger's end, 'the inertia of the penny refuses to partake of the instant motion of the card.' There is no such refusal. Simply, time enough is not allowed for the penny to receive from the card a quantity of force sufficient to project the penny also: hence it *can not* partake of the motion.

"On the same page we find, 'By attraction is meant that *property* or *quality* in the particles of bodies, which makes them tend towards each other.' Entirely wrong. If bodies distant from each other are forced together by reason of a *property* of their nature, then we must say that steam impels the engine in virtue of a property of steam; whereas, in fact, it is by the *repulsive* or *repressive force* of the steam that the work is done. The property of expansibility has no power; it is only the quality of the material, which allows of the action of the force named. So, we should have to say that we lift weights by a property of the muscles; when in truth we do this by means of a force or power, acting or exerted through the muscles. A physical property is something belonging to a body, and, so long as the latter is in a certain state, inseparable from it. *Forces* are not parts of bodies, but energies, independent of bodies, though present within and about them. And gravitation is a force, not a quality. In fact, our author himself, within a few lines, speaks of gravitation or force, and terms it 'the cause that keeps the planets in their orbits.'

"Page 14: the old error that the force required to separate a plate, wet with a liquid, from the liquid surface, affords a measure of the adhesion between the liquid and the solid. In truth, the adhesion is not the thing overcome, but in a manner the cohesion of the liquid to itself. Hence the former is not measured. Page 16: cork balls, coated with bees-wax, are said 'to repel the water' on which they are placed, and to come together by gravitational attraction. Neither is true; water coheres to itself more strongly than it does to wax or tallow; hence the water stands away from the edges of the small balls, forming two cups or troughs of the liquid surface, and in these the balls rest; and then as a further result of the cohesion of the water, the *crest* between these two *troughs* is gradually drawn down, and the two depressions run into one, throwing the balls together, as if by attraction. The balls do attract, but not sufficiently to produce thus the result witnessed. Page 18: We are told that, because lead has twelve times the density of cork, '*therefore* a piece of lead of any given size, and a piece of cork twelve times as large, will attract each other equally.' But on page 32, 'since all attraction is mutual, no body attracts another with a greater force than by [with] which

it is attracted.' The latter is the true principle, and hence the former is no principle, but a weak oversight. The earth and a pin's head must attract each other with an equal force.

"On page 23, it is stated that liquids in general 'are nearly inelastic'; while the fact is that if, as is probably true, liquids can be compressed, then after the extraordinary compressing force is removed, they return like gases perfectly to their previous volume. Hence they are *perfectly elastic*; and, it is only their small degree of compressibility that prevents the former property from being manifested under ordinary circumstances of pressure. Let water-drops fall on a water-surface, and they rebound, as small rubber balls would from marble; but owing to the cohesion of liquids, they draw up a thread of the liquid with them; and the height to which they rise is lessened by the action of this thread.

"But we can select further only a few prominent examples. Page 34: the question whether bodies thrown upward occupy the same times in rising and falling, but with reversed velocities, is discussed; and the authority of Dr. Lardner is paraded to prove that the times are equal. But while the ball is ascending, the resistance of the air acts to bring it sooner to rest, and when it is falling, the same resistance acts to keep it longer in its descent; and hence, in fact, *the times are not equal*, but the time of ascent to any height the ball can be made to reach, is shorter than the time of descent from that point. Page 36: it is stated that light bodies have their fall retarded by 'the *pressure* of the atmosphere.' Not so; but by the resistance of the atmosphere. Page 41: it is stated that a rocket is impelled by the atmospheric air 're-acting against the air' [gases] escaping from the rocket. In a slight degree only is this re-action thus effective. The flight of the rocket is mainly due to the pressure acting within its own cavity; this pressure being exerted against the closed end of the instrument, and in effect removed from the open end by the escape of gasses, the closed end is impelled forward, and if this end be directed upwards, the rocket ascends.

"Page 45: 'the force by which a body tends to go off in a straight line [from a circle while it is revolving] is called the centrifugal force.' Not true: the force here described is the tangential force. The centrifugal force is that by which a body tends to break away from its center of motion, and in lines pointing directly outward from that center. Consequently, the following is also wrong: 'If the centrifugal force should cease, the moving body would no longer perform [describe] a circle:' but this would be the result if the *projectile force* should cease.

"Page 178: it is stated that the boiling point of a thermometer is determined by placing the tube in a deep vessel containing water, and as the cut shows this water as covering the whole length of the tube, it is to be inferred that the tube is immersed in boiling water. But a tube so immersed would mark a point slightly above 212° Fahrenheit, because the heat in a vessel of boiling water is greater at the bottom than at the

surface. The point in question is actually determined by suspending the thermometer tube in a deep vessel kept constantly filled with steam escaping from boiling water beneath; and this after some minutes gives, when the barometer marks 30 inches, the true 212 of our common thermometers.

"On page 228, we read, 'The most probable opinion [in relation to the nature of light], however, is that light is composed of extremely small particles of matter'—the corpuscular or Newtonian theory. Now, in fact, this theory is at the present time wholly abandoned by almost every savan or thinker whose knowledge of recent discoveries in light entitle his opinions to any weight. And this theory has recently been shown to be not only improbable, but impossible, by an experiment of Foucault and Fizeau, by which it was proved that light travels in a measurable degree faster in a denser medium than in a rarer one—just the reverse of what should occur, if the corpuscular view of light were the correct one. Quite enough has been stated, I am sure, to enable those interested to judge of the accuracy of the book before us. Suppose the mariner to set forth on a voyage, relying on rules and tables of navigation no more full of errors than the guide in physical science here put into the pupil's hand: who would wish to be responsible for the consequences? And is not a true chart of knowledge quite as valuable to the tyro just setting sail on the sea of life?"

#### NOTES AND QUERIES.

NOTE 4.—On the fourth of August, 1492, Christopher Columbus lost sight of the most western lands of Europe, which he was not to see again till he returned to give Europe his gift of this New World. *Three hundred and sixty-six* years passed away, and on the fourth of August, 1858, the noblest vessel in the New World's Navy comes in sight of the most eastern of the highlands of North America; and as the sun goes down, she connects with the American shores the thread which gives Europe and America to each other. A mystic celebration of the great hero's faithful endeavor, at the end of a year of years after it was made.

NOTE 5.—Washington died the last year of the century, the last month of the year, the last day of the week, and the last hour of the day. He died 1799, Dec. 14, Saturday, between 11 and 12 o'clock, P. M.

QUERY 4.—What are the dimensions of the celebrated pear tree in the vicinity of Vincennes?

ANS. TO Q. 6, by Miss H. P. Hinkley:— "Banishing a Braganza" refers to Napoleon's declaration that the house of Braganza had forfeited the throne of Portugal, and to the consequent embarkation of the royal family for Portugal.

[Braganza was the name of a town from whose duke originated the royal family of Portugal.—ED.]

QUERY 6.—What was the name of the "Blind Preacher" referred to by Wirt?

QUERY 7.—What evidence is there that lightning rods have lessened the casualties from lightning?

ANS. TO Q. 3, by S. C. Crumbaugh:—"I saw by a Journal a few days ago, that Sir William Hamilton is living in retirement near Edinburgh. Whether true or not, of course I can not say."

QUERY 8.—What does Bailey, in his *Festus*, mean, when, speaking of the devil, he says, "you look like as if you were fed on buttered thunder"?

## BOOK NOTICES.

HANAFORD AND PAYSON'S BOOK-KEEPING.—This is a neat little book of copy-book size, containing 106 pages, and treats of both "Single and Double Entry." "One peculiar feature of this book is, that those portions which are to be written by the learner are engraved in imitation of real manuscript account books: by this means the mechanical part of Book-keeping, which is of no small importance, is taught by example. The style of writing suitable for the Ledger headings, for instance, should be quite different from that of the entries themselves."

The style of penmanship used is the same as that in *Payson, Dunton and Scribner's Copy-Books*. Judging from a hasty glance at the book, we are disposed to think it will be hailed with joy by those teachers that are forced into the ungrateful task of teaching book-keeping in schools not commercial.

COPY-BOOKS.—In this number of the *Journal*, three different series of Copy-Books, viz.: Potter and Hammond's, Payson, Dunton and Scribner's, and Goldsmith's. The first two series, which differ but little, we know to be worthy of patronage. They present quite a contrast with the copy-books in use ten years ago. We have not seen Goldsmith's Series, and are, therefore, unprepared to say whether it will meet the wants of schools or not.

PELTON'S OUTLINE MAPS.—These maps are too well known to need commendation. We take it for granted that every School wants a set, and the best way to get a supply is to order directly or indirectly from J. H. Rolfe, of Chicago, Ill., who is offering valuable premiums for securing sales of the maps. He also offers inducements to purchase of him *apparatus*, school furniture, and libraries. Send to him for a circular.

DAVIES'S UNIVERSITY ALGEBRA.—Prof. Davies has added another book to his mathematical text-books. The work contains 320 well printed pages, and is a compromise between his *First Lessons* and *Bourdon*. We have noticed several things in it that are not found in either of his other algebras. The work deserves the examination of mathematical teachers,—indeed, we believe those with whom Davies's Course is a favorite will be particularly pleased with this last effort of Prof. Davies.

## ITEMS.

Dr. R. T. Brown, of Crawfordsville, has been chosen successor to Prof. Young in the N. W. C. University.

The fifty-third Planetoid was discovered by Luther at Bilk, on the 4th of April, 1858.

H. B. Hibben has been elected President of Indiana Female College in place of Rev. T. H. Lynch, declined.

R. M. Johnson's salary at Ladoga is \$800 per annum, besides one-half the net earnings of the Institution with which he is connected.

SUBSCRIBERS.—We have stricken from our list more than two hundred subscribers whose time has expired, and lessened accordingly the number printed. Many of these subscribers we feel very sure will renew, and they ought to remit to us immediately, for fear that they may miss some numbers which we may not in future be able to supply. This number will not be sent to any except those who are *now* subscribers. Those missing this number should be informed by our readers of the cause.

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THE MATHEMATICAL MONTHLY may be expected about the first of October. Those who have sent their names to us as subscribers will please remit to us, immediately on receipt of the first number, their subscription money, either in Eastern bills, or in bills on the Bank of the State of Indiana.

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ERRATA.—In Prof. Hoss's article in the last number, the following mistakes occurred: On page 237, line 15, "to" should be omitted; in line 22, "that section" should be "the third section;" in line 23, "that" should be omitted; and on page 238, there should be a comma between "foundation" and "quoins."

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Several pages of editorial written for this number have been crowded out.

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#### STATE ASSOCIATIONS.

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Our space forbids us to refer to the proceedings of the Michigan and the Pennsylvania Associations. We notice that the address of Prof. Stoddard, President of the Pennsylvania Association, has been published in a number of the county papers in that State. After showing the influence of the State Association in the establishment of Teachers' Institutes, the County Superintendency, and Normal Schools, he discussed at length Moral Training. This subject is now extensively discussed in nearly all gatherings of teachers.

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NEW ADVERTISEMENTS.—Teachers should read the advertisements in this number, of A. S. Barnes & Co., and Crosby & Nichols.

Prof. Butler, of Crawfordsville, has gone to Wisconsin.

Mr. Pierson, the successor of Mr. Stone in the High School at Fall River, Mass., has resigned, and Mr. Chas. B. Goff, a resident of that place, has been chosen to fill the vacancy.

The R. I. Schoolmaster says that "Charles B. Chase, recently of Brown University, has been appointed Principal of the High School in Minneapolis, Minnesota."

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